

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2004/017969

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G21K5/00 B01J19/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G21K B01J F01N B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 639 401 A (THE BOC GROUP PLC; THE UNIVERSITY OF BIRMINGHAM) 22 February 1995 (1995-02-22) abstract; claim 2; figures 1,2; table 1	1,5-7, 10,11, 13-15,20
Y	-----	2-4,8,9, 12,16,21
Y	EP 0 989 577 A (MATSUSHITA ELECTRIC WORKS, LTD) 29 March 2000 (2000-03-29) paragraph '0026!	2,12,21
Y	----- US 6 345 497 B1 (PENETRANTE BERNARDINO M) 12 February 2002 (2002-02-12) column 5, lines 32,58; figure 1 ----- -/-	3,8,9



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents :

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Date of the actual completion of the international search

6 September 2005

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22/09/2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 05, 3 May 2002 (2002-05-03) & JP 2002 006094 A (EBARA CORP), 9 January 2002 (2002-01-09) cited in the application abstract	4, 16
A	----- US 4 305 000 A (CHEEVER ET AL) 8 December 1981 (1981-12-08) -----	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/017969

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0639401	A	22-02-1995	AT 200036 T	15-04-2001
			DE 69426955 D1	03-05-2001
			DE 69426955 T2	23-08-2001
			EP 0639401 A1	22-02-1995
			ES 2156138 T3	16-06-2001
			JP 3524590 B2	10-05-2004
			JP 7171382 A	11-07-1995
			US 5608197 A	04-03-1997
EP 0989577	A	29-03-2000	JP 2966842 B2	25-10-1999
			JP 2000100316 A	07-04-2000
			JP 3079097 B2	21-08-2000
			JP 2000306494 A	02-11-2000
			AT 259097 T	15-02-2004
			CN 1249525 A ,C	05-04-2000
			DE 69914556 D1	11-03-2004
			DE 69914556 T2	23-12-2004
			DK 989577 T3	08-03-2004
			EP 0989577 A2	29-03-2000
			ES 2213320 T3	16-08-2004
			KR 2000023410 A	25-04-2000
			SG 74751 A1	22-08-2000
			TW 436836 B	28-05-2001
			US 6590321 B1	08-07-2003
			US 2003197457 A1	23-10-2003
US 6345497	B1	12-02-2002	NONE	
JP 2002006094	A	09-01-2002	NONE	
US 4305000	A	08-12-1981	AT 4171 T	15-08-1983
			AT 21301 T	15-08-1986
			AU 530337 B2	14-07-1983
			CA 1118180 A1	16-02-1982
			CA 1128724 A2	03-08-1982
			CA 1128725 A2	03-08-1982
			DE 2965947 D1	25-08-1983
			DE 2967614 D1	11-09-1986
			DK 464379 A	04-05-1980
			EP 0011414 A1	28-05-1980
			EP 0054016 A2	16-06-1982
			ES 8100845 A1	16-02-1981
			ES 8101892 A1	01-04-1981
			JP 1302387 C	14-02-1986
			JP 55120872 A	17-09-1980
			JP 60019618 B	17-05-1985
			RU 2052224 C1	10-01-1996
			US 4367412 A	04-01-1983